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EXAMINER

KIM, TAEYOON

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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DETAILED ACTION

Applicant's amendment and response filed on 2/3/2010 has been received and entered into the case. The instant response and amendment did not cure the deficiency with regard to the proper claim identifier. Since claims 1-7 have been withdrawn, their identifier should be "withdrawn." (See M.P.E.P. §714). Applicant is required to use a proper claim identifier for the subsequent response/amendment to the Office. In order to expedite the examination process, the currently amended claims are examined.

Claims 8 and 21-23 are canceled, claims 1-7 have been withdrawn from consideration as being drawn to non-elected subject matter, and claims 9-20 have been considered on the merits. All arguments have been fully considered.

Claim Objections

The claim objection has been withdrawn due to the amendment.

Claim Rejections - 35 USC § 112

The claim rejection under 35 U.S.C. §112 has been withdrawn due to the amendment.

Claim Rejections - 35 USC § 101

The claim rejection under 35 U.S.C. §101 has been withdrawn due to the amendment.

Claim Rejections - 35 USC § 102

The claim rejection under 35 U.S.C. §102 has been withdrawn due to the amendment.

Claim Rejections - 35 USC § 103

The claim rejection under 35 U.S.C. §103 has been withdrawn due to the amendment.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s)

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of rejection based on the newly introduced limitation in the instant amendment.

However, with regard to the limitations in the previous claims and the claim rejection based on McDaniel, Applicant's arguments have been fully considered but they are not persuasive.

Applicant alleged that McDaniel does not employ intact organisms. The quoted paragraph in the previous OA is par. 117, rather than 116. While par. 116 disclose what applicant elaborate in the response, par. 117 clearly discloses that the biomolecule comprises living microorganism (see par. 117 at p.13, left col. lines 3-5). Therefore, this argument is not persuasive.

Secondly, Applicant alleged that McDaniel describes a mixture of the biomolecule with an insoluble component, not a separate layer thereof, and referred Example 11 citing “the biomolecular composition of the present invention may be incorporated into a standard coating by direct addition.” In response to applicant's argument, it is noted that the features upon which applicant relies (i.e., separate layers of water-insoluble layer and microorganism layer) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). However, upon the introduction of new limitations to the current claims, this argument is moot.

In addition, the argument based on new limitation introduced in the instant amendment that the reference does not mention of providing a uniform color by using pigmented organisms is moot per the following new claim rejection.

Claim Rejections - 35 USC § 103- New Rejection

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDaniel (US 2004/0109853; of record) in view of Selvig et al. (US 5,919,689; of record).

McDaniel teaches various coatings and paints comprising biomolecule composition derived from microorganism including living microorganisms (Abstract; par. 117).

It is an inherent property of coating or paints applied to porous surface such as wood would impregnate into the pores of the surface, and thus meets the limitation of claim 10.

McDaniel teaches the coating and/or film thickness upon a surface being in a range of 1 μm to 2000 μm (par. 878; Example 12).

McDaniel teaches that the water insoluble coating can be deformers including mineral oil, fatty acid ester, wax, pine oil or a combination thereof (par. 746).

McDaniel also teaches that the examples of contemplated microorganisms include a bacterium, a fungus or a combination thereof (par. 256).

McDaniel teaches an architectural coating suitable to coat surface materials commonly found as part of buildings such as a plaster surface, a wood surface, a metal surface, a masonry surface, etc. (par. 329).

Although McDaniel teaches the use of live microorganism as disclosed in par. 117, even if McDaniel's teaching is considered not to contain living microorganism, it would have been obvious to a person of ordinary skill in the art to use living microorganism to protect a surface

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material from the growth of unwanted microorganisms as Selvig et al. teach the use of innocuous microorganism in the coating to out-compete unwanted organisms from the environment (col. 4, line 63 – col. 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art to use living microorganism in the coating of McDaniel.

With regard to the order of layers being a water-insoluble substance coating on the surface of the base material, and a micro-organism layer covering the coating, McDaniel teaches a multicoating system having multiple layers of coatings including a sealer, a primer, a water-repellent, a undercoat and a topcoat (finish; outermost layer), and the topcoat comprises the biomolecular composition (par. 45). Since McDaniel teaches that the biomolecular composition would contain live microorganism (par. 117), it would have been obvious to a person of ordinary skill in the art that the topcoat of McDaniel is considered as a micro-organism layer covering the coating of water-insoluble substance (i.e. a layer of water-repellent).

With regard to the limitation drawn to garden furniture, fence, façade element or cladding comprising the water insoluble substance and a microorganism layer, it would have been obvious to a person of ordinary skill in the art to try the coatings of McDaniel in view of Selvig et al. for garden furniture, fence, façade element or cladding since the coating comprising microorganism of McDaniel in view of Selvig et al. is suitable for architectural materials including furniture, a wood surface, and a masonry surface (building material) (par. 329 of McDaniel).

Although McDaniel teaches the use of fatty acid ester, the reference does not teach the fatty acid ester being C4 to C32 saturated or unsaturated form (claim 14). However, it would have been obvious to a person of ordinary skill in the art to try claimed fatty acid ester since it is

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considered as a well known option with a predictable outcome within his or her technical grasp for the paint and/or coating of McDaniel.

The Supreme Court recently states in *KSR v. Teleflex* (550 US82 USPQ2d 1385, 2007) “The same constricted analysis led the Court of Appeals to conclude, in error, that a patent claim cannot be proved obvious merely by showing that the combination of elements was “obvious to try.” *Id.*, at 289 (internal quotation marks omitted). When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103.” See also M.P.E.P. §2141.

With regard to the growth substrate layer comprising carbohydrates and/or proteins (claims 15 and 16), McDaniel does not teach that the coating or paint comprising microorganism comprises a growth substrate layer in the microorganism layer, and the growth substrate comprises carbohydrates and/or proteins.

However, it is well known in the art that carbohydrates and/or proteins exuded from the microorganisms and by these extracellular carbohydrates and/or proteins are used for microorganisms to attach and as a constantly renewed supply of organic nutrients that are conducive to growth according to Selvig et al. (col. 1, lines 40-57). Therefore, it would have been obvious to a person of ordinary skill in the art to use carbohydrates and/or proteins in the microorganism layers to have the microorganisms for the coatings and/or paints to adhere and grow utilizing carbohydrates and/or proteins.

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Furthermore, the presence of living microorganisms in McDaniel's paints and/or coatings meet the limitation because it is inherent property of the microorganisms to exude carbohydrates and/or proteins according to Selvig et al. (col. 1, lines 40-57).

With regard to the limitation drawn to the thickness of microorganism layer being less than about 1000 μm (claim 17), it would have been obvious to a person of ordinary skill in the art to routinely optimize the thickness of microorganism layers since it is considered that a person of ordinary skill in the art would recognize that the thickness of microorganism layer is a result-effective variable.

It is well settled that routine optimization is not patentable, even if it results in significant improvements over the prior art. In support of this position, attention is directed to the decision in *In re Aller*, Lacey, and Haft, 105 USPQ 233 (CCPA 1955): Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. *In re Dreyfus*, 22 C.C.P.A. (Patents) 830, 73 F.2d 931, 24 USPQ 52; *In re Waite et al.*, 35 C.C.P.A. (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. *In re Swenson et al.*, 30 C.C.P.A. (Patents) 809, 132 F.2d 1020, 56 USPQ 372; *In re Scherl*, 33 C.C.P.A. (Patents) 1193, 156 F.2d 72, 70 USPQ 204. However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. *In re Sola*, 22 C.C.P.A. (Patents) 1313, 77 F.2d 627, 25 USPQ 433; *In re Normann et al.*, 32 C.C.P.A.

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(Patents) 1248, 150 F.2d 708, 66 USPQ 308; *In re Irmischer*, 32 C.C.P.A. (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 C.C.P.A. (Patents) 1250, 156 F.2d 239, 70 USPQ 412; *Minnesota Mining and Mfg. Co. v. Coe*, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; *Allen et al. v. Coe*, 77 App. D. C. 324, 135 F.2d 11,57 USPQ 136. (Emphasis added). With regards to determining experimental parameters, such as time in culture, the court has held that "[d]iscovery of optimum value of result effective variable in known process is ordinarily within skill of art (In *re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980)).

The adjustment of particular conventional working conditions (e.g., thickness of microorganism layer) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan having the cited reference before him/her.

Therefore, the invention as a whole would have been *prima facie* obvious to a person of ordinary skill at the time the invention was made.

Allowable Subject Matter

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

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Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taeyoon Kim whose telephone number is (571)272-9041. The examiner can normally be reached on 8:00 am - 5:00 pm ET (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Taeyoon Kim/
Primary Examiner, Art Unit 1651